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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,472	01/21/2004	Morris Dilmore	103485.143US2	2619

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EXAMINER
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ROE, JESSEE RANDALL

ART UNIT	PAPER NUMBER
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1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/761,472

Applicant(s)

DILMORE ET AL.

Examiner

Jessee Roe

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,21-26 and 28-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,21-26 and 28-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claims Status***

Claims 1-2, 21-26 and 28-38 remain for examination wherein claims 1-2 and 23-24 are amended; claims 3-20 and 27 are canceled; and claims 36-38 are new.

### ***Status of Previous Rejections***

The previous rejection of claims 1-2, 23-24 and 28-35 under 35 U.S.C. 103(a) as being unpatentable over Anthony (US 3,068,095) is withdrawn in light of the Applicant's amendments to the claims and the Applicant's arguments. The previous rejection of claims 1-2, 23-24 and 28-35 under 35 U.S.C. 103(a) as being unpatentable over Hill (Re 28,523) is withdrawn in light of the Applicant's amendments to the claims. The previous rejection of claims 21-22 and 25-26 under 35 U.S.C. 103(a) as being unpatentable over Anthony (US 3,068,095) or Hill (Re 28,523) and further in view of Lyon (2,942,339) is withdrawn in light of the Applicant's amendments to the claims and the Applicant's arguments.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 23-24 and 28-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gondo et al. (US 3,574,602).

In regards to claims 1-2, 23-24 and 28-38, Gondo et al. ('602) teach (col. 6, lines 27-45) an alloy steel having in weight percent: 0.05 to 0.80 weight percent carbon, 0.05 to 2 weight percent silicon, 0.30 to 2.00 weight percent manganese, 0.05 to 6 weight percent chromium, 0.01 to 0.30 weight percent titanium, 0.005 to 0.30 weight percent zirconium, 0.0005 to 0.008 weight percent boron, further at least one element selected from the group consisting of tin, antimony and arsenic in the range of 0.03 to 0.50 weight percent, at least one element selected from the group consisting of niobium plus tantalum in an amount of up to 1 weight percent, tungsten in an amount of up to 1 weight percent, hafnium in an amount of up to 0.50 weight percent, and palladium in an amount of up to 1 weight percent, and still further at least one element selected from the group consisting of molybdenum in an amount of 0.05 to 1 weight percent, nickel in an amount of 0.05 to 5 weight percent, vanadium in an amount of 0.005 to 1 weight percent and copper in an amount of 0.03 to 0.50 weight percent, the balance being iron and unavoidable impurities, which overlaps the claimed ranges of carbon, manganese, silicon, chromium, nickel, molybdenum, vanadium, tungsten and copper, which is a prima facie case of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of each of the elements from the ranges disclosed by Gondo et al. ('602) because Gondo et al. ('602) teach the same utility throughout the disclosed ranges. Also, Gondo et al. ('602) do not necessitate the addition of any sulfur, phosphorus, nitrogen, calcium, or aluminum. Gondo et al. ('602) teach tensile strengths that range from 130-159 kg/mm<sup>2</sup> (184-226 ksi), which are tensile strengths closely resemble the tensile strengths of ES-1 and

ES-3 shown in Table 3 of the instant specification. The alloy steel of Gondo et al. ('602) would inherently have a Charpy V-notch impact strength of about 20-43 at -40°F, an ultimate tensile strength in the range of about 233-270 ksi, and a strain-to-failure rate of about 15.1 to about 16.6% because Gondo et al. ('602) teach (col. 1, lines 14-24) comparable tensile strength and substantially the same composition as that of the claimed invention.

Still regarding claims 1-2 and 23-24, the Examiner asserts that 1 weight percent tungsten would be close enough to about 1.17 weight percent tungsten, as disclosed by Gondo et al. ('602), to establish a prima facie case of obviousness absent evidence to the contrary. See MPEP 2131.03 III.

In regards to the amended features of claims 1-2 and 23-24, the claims remain open to the addition of other elements because they recite the language "balance consisting essentially of iron".

Claims 1-2, 23-24 and 28-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshie et al. (US 5,454,883).

In regards to claims 1-2, 23-24 and 28-38, Yoshie et al. ('883) teach a steel consisting of 0.02 to 0.50 weight percent carbon, 0.02 to 10 weight percent manganese, 0.01 to 1 weight percent silicon, 0.1 or less weight percent aluminum, and at least one element selected from the group consisting of 3 weight percent or less molybdenum, 10 weight percent or less nickel, 3 weight percent or less chromium, 0.1 weight percent or less vanadium, 0.1 weight percent or less niobium, 0.1 weight percent or less titanium, 0.003 weight percent or less boron, 10 weight percent or less copper, 10 weight percent

or less cobalt, 3 weight percent or less tungsten, and the balance consisting of iron and unavoidable impurities (col. 2, line 60 – col. 3, line 16), which overlaps the claimed ranges of carbon, manganese, silicon, chromium, nickel, molybdenum, vanadium, tungsten, aluminum and copper, which is a prima facie case of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of each of the elements from the ranges disclosed by Yoshie et al. ('883) because Yoshie et al. ('883) teach the same utility throughout the disclosed ranges.

Still regarding claims 1-2, 23-24 and 28-38, Yoshie et al. ('883) do not necessitate the addition of any sulfur, phosphorus, nitrogen, or calcium. Yoshie et al. ('883) teach tensile strengths up to  $160 \text{ kg/mm}^2$  (227 ksi), which are tensile strengths that closely resemble the tensile strengths of ES-1 and ES-3 shown in Table 3 of the instant specification. Yoshie et al. ('883) teach Introducing dislocations by transformations such as martensite in order to improve the ductility (col. 13, lines 4-23) and modifying the copper, nickel, chromium, molybdenum, cobalt, and tungsten contents in order to improve the strength of the steel (col. 15, line 61 – col. 16, line 8). See MPEP 2144.05 II. The alloy steel of Yoshie et al. ('883) would inherently have a Charpy V-notch impact strength of about 20-43 at  $-40^\circ\text{F}$ , an ultimate tensile strength in the range of about 233-270 ksi, and a strain-to-failure rate of about 15.1 to about 16.6% because Yoshie et al. ('883) teach (col. 1, lines 14-24) comparable tensile strength and substantially the same composition as that of the claimed invention.

Claims 21-22 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gondo et al. (US 3,574,602) or Yoshie et al. (US 5,454,883) as applied to claims 1-2, 23-24 and 28-38 above and further in view of Lyon (US 2,942,339).

In regards to claims 21-22 and 25-26, neither Gondo et al. ('602) nor Yoshie et al. ('883) specify wherein the steel would be used for a bomb casing material. However, Lyon teaches (col. 2, lines 40-50) that low-carbon steels having high strength and ductility are conventionally used for making bomb casings. Because Gondo et al. ('602) and Yoshie et al. ('883) teach low-carbon steels having strength and ductility, then it would be obvious to one of ordinary skill in the art at the time the invention was made to use the steel of Gondo et al. ('602) or the steel of Yoshie et al. ('883) for making bomb casings.

### ***Response to Declaration/Arguments***

The declaration under 37 CFR 1.132 filed 16 January 2007 is insufficient to overcome the rejection of claims 1-2, 23-24 and 28-35 based upon 35 U.S.C. 103(a) as set forth in the last Office action because: The declaration does not provide factual evidence that the steel of Gondo et al. ('602) would not have the ultimate tensile strength, the Charpy V-notch impact strength and a ductility high rate strain-to-failure of about 15.1 to about 16.6%. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430,

Art Unit: 1742

433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. See also Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2112.01 I. Showing of unexpected results must compare the closest prior art. Ex parte Beck 9 USPQ 2d 2000 (BPAI 1987); In re Burkel 201 USPQ 67 (CCPA 1979); In re Merchant 197 USPQ 785 (CCPA 1976). In the instant case, the closest prior art would be that of Gondo et al. ('602) and Yoshie et al. ('883).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date



Art Unit: 1742

of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Thursdays and alternate Fridays, 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

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